Textbook Alignment to the Utah Core – Algebra 1

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) Yes N/A No N/A

Name of Company and Individual Conducting Alignment: Ryan Foster

A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

X On record with the USOE.

☐ The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): Algebra 1 Core Curriculum

Title: Prentice Hall Mathematics: Algebra 1 © 2009 ISBN#: 0133659461 (SE); 0133659518 (TE)

Publisher: Pearson

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: 100%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: N/A

STANDARD I: Students will expand number sense to understand, perform operations, and solve problems with real numbers.

Percentage of coverage in the *student and teacher edition* for Standard I: 100 %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: N/A**

	Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material*	*Not covered in TE, SE or*

OBJECTIVES & INDICATORS		(titles, pg #'s, etc.)	*ancillaries*
Objective 1.1: Represent real numbers as points on the number line and distinguish rational numbers from irrational numbers.			
a. Define a rational number as a point on the number line that can be expressed as the ratio of two integers, and points that cannot be so expressed as irrational.	**SE/TE: 17-23, 48, 50**		
b. Classify numbers as rational or irrational, knowing that rational numbers can be expressed as terminating or repeating decimals and irrational numbers can be expressed as non-terminating, non-repeating decimals.	**SE/TE: 17-23, 48, 50, 177-180, 193-194**		
c. Classify *pi* and square roots of non-perfect square numbers as irrational.	**SE/TE: 17-23, 48, 50, 177-180, 193-194**		
d. Place rational and irrational numbers on a number line between two integers.	**SE/TE: 17-23, 48, 50**		
Objective 1.2: Compute fluently and make reasonable estimates with rational and irrational numbers.			
a. Simplify, add, subtract, multiply, and divide expressions with square roots.	**SE/TE: 616-628, 655-656, 658**		
b. Evaluate and simplify numerical expressions containing rational numbers and square roots using the order of operations.	**SE/TE: 9-15, 48, 50**		
c. Compute solutions to problems, represent answers in exact form, and determine the reasonableness of answers.	**SE/TE: 119-124, 134-139, 191-192, 194**		
d. Calculate the measures of the sides of a right triangle using the Pythagorean Theorem.	**SE/TE: 181-189, 193-194**		

STANDARD II: Students will extend concepts of proportion to represent and analyze linear relations.			
Percentage of coverage in the *student and teacher edition* for Standard II: 100%		**Percentage of coverage not in student or r edition, but covered in the *ancillary material* for Standard II: N/A**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 2.1: Represent and analyze the slope of a line.			
a. Identify the slope of a line when given points, a graph, or an equation.	**SE/TE: 308-323, 365-366, 368**		
b. Identify horizontal and vertical lines given the equations or slopes.	**SE/TE: 311-315, 365, 368**		
c. Determine the effect of changes in slope or *y*-intercept t in $y = mx + b$.	**SE/TE: 317-323, 366, 368**		
d. Determine and explain the meaning of slopes and intercepts using real-world examples.	**SE/TE: 317-329, 366, 368**		
Objective 2.2Model and interpret problems having a constant rate of change using linear functions.			
a. Write algebraic expressions or equations to generalize visual patterns, numerical patterns, relations, data sets, or scatter plots.	**SE/TE: 4-8, 27-37, 48-50, 270-276, 300, 302, 350-357, 367-368**		
b. Represent linear equations in slope-intercept form, $y = mx + b$, and standard form, $Ax + By = C$.	**SE/TE: 307-323, 330-335, 366, 368**		
c. Distinguish between linear and non-linear functions by examining a table, equation, or graph.	**SE/TE: 667-671, 715, 718**		
d. Interpret the slope of a linear function as a rate of change in real-world situations.	**SE/TE: 308-315, 324-329, 365-366, 368**		

Objective 2.3: Represent and analyze linear relationships using algebraic equations, expressions, and graphs.			
a. Write the equation of a line when given two points or the slope and a point on the line.	**SE/TE: 317-323, 337-341, 366, 368**		
b. Approximate the equation of a line given the graph of a line.	**SE/TE: 318-329, 366, 368**		
c. Identify the *x*- and *y*-intercepts from an equation or graph of a line or a table of values.	**SE/TE: 330-335, 366, 368**		
d. Graph linear relations and inequalities by plotting points, by finding *x*- and *y* intercepts, or by using the slope and any point on the line.	**SE/TE: 263-269, 300, 302, 319-323, 331-335, 366, 368, 404-410, 423-424**		
STANDARD III: Students will develop fluency with the language and operations of algebra to analyze and represent relationships.			
Percentage of coverage in the *student and teacher edition* for Standard III: <u>100</u> %		**Percentage of coverage not in student or r edition, but covered in the *ancillary material* for Standard III: N/A**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 3.1: Simplify polynomials and the quotient of monomials.			
a. Simplify and evaluate monomial expressions and formulas.	**SE/TE: 494-499, 541, 544**		
b. Add and subtract polynomials.	**SE/TE: 494-499, 541, 544**		
c. Multiply monomials by a polynomial.	**SE/TE: 500-503, 542, 544**		
d. Multiply binomials.	**SE/TE: 505-517, 542, 544**		
e. Simplify the quotient of monomials using positive exponents.	**SE/TE: 453-459, 486, 488**		

Objective 3.2: Solve and interpret linear ons and inequalities in various situations ing real-world problems.			
a. Solve single-variable linear equations and inequalities algebraically and graphically.	**SE/TE: 118-139, 191-192, 194, 206-225, 244, 246, 404-410, 423-424**		
b. Solve real-world problems involving constant rates of change.	**SE/TE: 308-315, 365, 368**		
c. Solve equations for a specified variable.	**SE/TE: 140-141, 192, 194**		
d. Solve proportions that include algebraic first-degree expressions.	**SE/TE: 142-148, 192, 194**		
Objective 3.3: Solve and interpret pairs of linear equations and inequalities.			
a. Solve systems of two linear equations graphically and algebraically with and without technology.	**SE/TE: 374-395, 421-422, 424**		
b. Determine the number of possible solutions for a system of two linear equations.	**SE/TE: 376-380, 421, 424**		
c. Graph a system of linear inequalities and identify the solution.	**SE/TE: 411-419, 423-424**		
Objective 3.4: Factor polynomials with common monomial factors and factor simple quadratic expressions.			
a. Find the greatest common monomial factor of a polynomial.	**SE/TE: 501-503, 542, 544**		
b. Factor trinomials with integer coefficients of the form $x^2 + bx + c$.	**SE/TE: 519-523, 542, 544**		
c. Factor the difference of two squares and perfect square trinomials.	**SE/TE: 528-533, 543-544**		
Objective 3.5: Solve quadratic equations using factoring or by taking square roots.			
a. Solve quadratic equations that can be simplified to the form $x^2 = a$ where $a \geq 0$ by taking square roots.	**SE/TE: 565-570, 608, 610**		
b. Solve quadratic equations using factoring.	**SE/TE: 572-576, 608, 610**		
c. Write a quadratic equation when given the solutions.	**SE/TE:**		

STANDARD IV: Students will understand concepts from statistics and apply statistical methods to solve problems.			
Percentage of coverage in the *student and teacher edition* for Standard IV: 100%		**Percentage of coverage not in student or r edition, but covered in the *ancillary material* for Standard IV: N/A**	
OBJECTIVES & INDICATORS	**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries***
Objective 4.1: Objective 1: Summarize, display, and analyze bivariate data.			
a. Collect, record, organize, and display a set of data with at least two variables.	**SE/TE: 33-39, 49-50, 52-53, 350-357, 367-368**		
b. Determine whether the relationship between two variables is approximately linear or non-linear by examination of a scatter plot.	**SE/TE: 33-39, 49-50, 52-53, 350-357, 367-368**		
c. Characterize the relationship between two linear related variables as having positive, negative, or approximately zero correlation.	**SE/TE: 33-39, 49-50**		
Objective 4.2: Estimate, interpret, and use lines fit to bivariate data.			
a. Estimate the equation of a line of best fit to make and test conjectures.	**SE/TE: 350-357, 367-368**		
b. Interpret the slope and *y*-intercept of a line through data.	**SE/TE: 350-357, 367-368**		
c. Predict *y*-values for given *x*-values when appropriate using a line fitted to bivariate numerical data.	**SE/TE: 350-357, 367-368**		